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Sclerotherapy: Statistics On Its Effectiveness For Unstable Joint Conditions

. . . by David Shuman, D.O.

I used to consider Valpeau as the originator of the idea of stimulating scar tissue formation at specific sites for support. In citing his work on hernia with crude escharotics it seemed to me that the original fountain from which all other forms of sclerotherapy flowed had been named. Certainly Valpeau doing the work he did in the middle of the last century gave a boost to our particular form of therapy, but actually we have a much older history. The origin of sclerotherapy can be traced back to Hippocrates. He used sclerotherapy and it was *joint sclerotherapy.*

Let me quote you what that great man had to say about recurrent shoulder dislocations. "It deserves to be known how a shoulder which is subject to frequent dislocations should be treated. For many persons owing to this accident have been obliged to abandon gymnastic exercises, though well qualified for them; and from the same misfortune have become inept in warlike practices, and have thus perished. And this subject deserves to be noticed, because I have never known any physician to treat the case properly; some abandon the attempt altogether, and others hold opinions and practise the very reverse of what is proper. For many physicians have burned the shoulders subject to dislocation, at the top of the shoulder, at the anterior part where the head of the humerus protrudes, and a little behind the top of the shoulder; these burnings, if the dislocation of the arm were upward or forward, or backward, would have been properly performed; but now, when the dislocation is downward, they rather promote than prevent dislocations, for they shut out the head of the humerus from the free space above.

"The cautery should be applied thus: taking hold with the hands of the skin at the armpit, it is to be drawn into the line, in which the head of the humerus is dislocated; and then the skin drawn aside is to be burnt to the opposite side. The burnings should be performed with irons, which are not thick nor much rounded, but of an oblong form, (for thus they pass the more readily through), and they are to be pushed forward with the hand; the cauteries should be red hot, that they may pass through as quickly as possible; for such as are thick pass through slowly, and occasion eschars of a greater breadth than convenient, and there

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is danger that the cicatrices may break into one another; which, although nothing very bad, is most unseemly, or awkward.

"When you have burnt through, it will be sufficient, in most cases, to make eschars only in the lower part; but if there is no danger of the ulcers passing into one another, and there is a considerable piece of skin between them, a thin spatula is to be pushed through these holes which have been burned, while, at the same time, the skin is stretched, for otherwise the instrument could not pass through; but when you have passed it through you must let go the skin, and then between the two eschars you should form another eschar with a slender iron, and burn through until you come in contact with the spatula.

Avoid Glands and Nerves

"The following directions will enable you to determine how much of the skin of the armpit should be grasped; all men have glands in the armpit greater or smaller, and also in many other parts of the body. But I will treat in another work of the whole constitution of the glands, and explain what they are, what they signify, and what are their offices. The glands, then, are not to be taken hold of, nor the parts internal to the glands; for this would be attended with great danger, as they are adjacent to the most important nerves. But the greater part of the substances external to the glands are to be grasped, for there is no danger from them. And this, also, it is proper to know, that if you raise the arm much, you will not be able to grasp any quantity of skin worth mentioning, for it is all taken up with the stretching; and also the nerves, which by all means you must avoid wounding, become exposed and stretched in this position; but if you only raise the arm a little, you can grasp a large quantity of skin, and the nerves which you ought to guard against are left within, and at a distance from the operation.

"Should not, then, the utmost pains be taken in the whole practise of the art to find out the proper attitude in every case? So much regarding the armpit, and these contractions will be sufficient, provided the *eschars be properly placed.*

"Without the armpit there are only two places where one might place the eschars to obviate this affection; the one before and between the head of the humerus and the tendon at the armpit; and then the skin may be fairly burned through, but not to any great depth, for there is a large vein adjacent, and also nerves, neither of which must be touched with the heat. But externally, one may form another eschar considerably above the tendon at the armpit, but a little below the head of the humerus; and the skin must be burned fairly through, but it must not be made very deep, for fire is inimical to the nerves.

"Through the whole treatment the sores are to be so treated, as to avoid all strong extension of the arm, and this is to be done moderately, and only as far as the dressing requires; for thus they will be less cooled (for it is of importance to cover up all sorts of burns if one would treat them mildly), and then the lips of them

will be less turned aside; there will be less hemorrhage and fear of convulsions. But when the sores have become clean, and are going on to cicatrization, then by all means the arm is to be bound to the side night and day; and even when the ulcers are completely healed, the arm must still be bound to the side for a long time, for thus more especially will cicatrization take place, and the wide space into which the humerus used to escape will become contracted." [Ed. Note. This quotation and subsequent quotations from Hippocrates are taken from "The Genuine Works of Hippocrates," Translated by Francis Adams, The Williams and Wilkins Co., Baltimore, 1946.]

What Hippocrates of necessity accomplished with a hot iron (namely, scar tissue production at the site of weakness) was the identical tissue now obtained by us with our technics. Improvements in materials and refinements of technic have not changed the basic concept of making a part stronger with the help of scar tissue. Of course, before any of us, Pina Mestre, Valpeau or Hippocrates, Old Mother Nature had been using it. Scar tissue is her string to bind and her patch to cover.

Instability of joints was recognized by Hippocrates for he says, "Wherefore, it should be known that one constitution differs much from another as to the facility with which dislocations in them may be reduced, and one articular cavity differs much from another, the one being so constructed that bone readily leaps out of it, and another less so; but the greatest difference regards the binding together of the parts by the ligaments which are slack in some, and tight in others."

Sclerotherapy Today

Practice of sclerotherapy as it is done today, with the hypodermic and sclerosing solution, dates back to around 1937. It was Dr. Earl Gedney who introduced it to the profession in Philadelphia. I became interested in his technics at that time and began to use the method on patients with knee or sacroiliac lesions. Later I developed technics for sclerotherapy in shoulder lesions and zygapophyseals. Actually I believe sclerotherapy an effective technic in a greater range of disorders. To my mind these should include degenerated disks, hypermobile sacroiliacs, "trick" knees, spondylolisthesis, unstable zygapophyseals and recurrent shoulder dislocations. As we all know, much more radical treatment is common in these conditions, and as many of us have learned the radical methods often may be ineffective.

To get some idea of the prevalence of two of the more common conditions mentioned consider the following figures. In 1952 the Veterans Administration[1] counted 5082 prolapsed, ruptured, herniated or otherwise "fouled up" disks and did 1202 laminectomies, 754 hemilaminectomies and 618 arthrodeses or fusions. They tabulated 3204 people with some form of sacroiliac trouble or another such as strain, sprain, relaxation or developmental anomalies. The rate at which laminectomies were performed in Pennsylvania under Blue Shield[2] (Medical Service Association of Pennsylvania) auspices during 1952 was 22 per 1000 operations. During

1952 Blue Shield paid for 212,822* operations of all kinds so at the given rate of 22 per 1000 that will total approximately 4680 laminectomies. This, of course, is not all the laminectomies done in Pennsylvania. During the same period they paid to have four in each 1000 in traction and one in each 1000 in a body cast. There are about 10,000,000 people in Pennsylvania and of this number 2,121,472 were Blue Shield subscribers in 1952. One small orthopedic appliance manufacturer in Philadelphia turned out an average of 200 sacroiliac belts a week during 1952.

Since 1937 I have used joint sclerotherapy. At first this was confined to sacroiliacs and knees. Later the shoulder and still later the zygapophyseals and disk were treated by sclerotherapy. It is one thing to form your opinions from your own observations and another thing to listen to what the other fellow says. This report contains a tabulation of the opinions of those whom I have treated with joint sclerotherapy, opinions of surgeons on their field of operations in regard to laminectomy and traction, as well as my own opinion.

Results of Survey

The writer has been keeping records for about sixteen years on patients treated by sclerotherapy. In an effort to evaluate the worth of this treatment, I recently checked to learn the current status of 250 patients, some of whom had first been treated as far back as 1938. The results of this survey I humbly believe warrant further investigation of sclerotherapy by many more men in the profession.

132 were treated for hypermobile sacroiliac; 33 for degenerated disks; 26 for hypermobile knees; 28 for recurrent shoulder dislocation; 27 for unstable zygapophyseals; 8 for spondylolisthesis; and 7 for other joints such as costochondral, wrist, ankle and acromioclavicular. This adds up to 261 because some of the patients had two or more joints treated as for instance, sacroiliac and disk or zygapophyseal.

To date 93 replies on the questionnaire cards have been received, and twenty-three were not delivered because of change of address or death. There are five replies that raise questions about the therapy, and the rest are satisfactory without question. The questionable five will be analyzed separately. Breakdown of replies is as follows:

Site of original lesion	Questioned value of treatment	Improved sufficiently to perform usual occupation
Sacroiliac	1	44
Vertebral disk	0	17
Spondylolisthesis	1	4
Zygapophyseals	0	11
Knees	2	17
Shoulder	1	10
Other joint	0	1

These are the instances in which some question was raised by the patient about the efficacy of joint sclerotherapy:

The first one was from a man who received treatments to the sacroiliac for low back pain. His card came back with a notation that he felt worse than he did in 1951 when I treated with apparently good results. I called him on the phone and found that he had subsequently developed a generalized arthritis and had been treated for it with cortisone, butazolidin, rest and traction without relief. It is obvious that joint sclerotherapy alone is not being judged here.

Second case was that of a dentist

whose reply questioned the diagnosis of spondylolisthesis which had been made two years before. In 1952 he had severe low back pain and X-ray studies showed a second degree spondylolisthesis. He made rapid progress with joint sclerotherapy. Instead of returning the card filled out he sent a note in which he stated that he thought the X-ray man and I had missed the boat on diagnosis. What he really had was kidney trouble, and there was nothing wrong with his back because at the hospital when he had been treated for his kidney trouble he was told that there was nothing wrong with his back but there was kidney cyst. As events worked out this one really belongs in the satisfactory count. I called him on the phone and got this recital of events. In 1952 around Thanksgiving time and the night before he was to see me he had a sharp pain in the right groin which woke him from sleep. He got in a cab and went to a nearby hospital. There he received sedation and was free of pain the next day. X-ray films were made which showed a kidney cyst on the right. He was operated on and an uneventful recovery took place. I then got in touch with the radiologist at the hospital and found that no lateral studies or any other studies of the spine had been made, only kidney study. Somewhere the dentist-patient got the wrong idea. Fortunately, I have the films showing the spondylolisthesis. The patient, the radiologist and myself are all aware of the story now and the patient is certainly contented and working regularly at his profession.

Then there were two knee cases: A woman patient had no trouble with hypermobility until she developed rheumatoid arthritis and received cortone treatment. She then developed recurrent shoulder dislocations of both shoulders and hypermobile knees. She wore braces on all four extremities. In 1952 she was treated in all four joints with good results so that she could manage with no braces. She has continued to get cortone for her arthritis. She writes that the shoulders are still staying put but that she has had to resume her knee braces. Obviously this is a tough case. She will probably have trouble as long as she has to take her present treatment for arthritis.

The second case was that of a young girl with hypermobile knees treated in 1953. Her mother writes that she does not know how much better her daughter is. She is again participating in sports which she had had to give up because of the wobbly knee throwing her, but "last week while she was dancing her knee cap jumped out." I do not know how to grade this one either because I did not treat the knee cap nor did she have trouble with it when I saw her.

Shoulder Lesion

There was one reply from a man who had had his shoulder fixed in 1941. He now questions the efficacy of the treatment. He played high school football after his treatments and then went on to serve in the Army in the second World War as a soldier on active duty. He says he had some dislocations afterwards but none after 1951. He is now practising as a medical physician.

For comparative results with sur-

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gery consider the stiff-legged walk of those who have had their medial meniscus removed for "trick" knee, the lack of normal shoulder in those who have had tendon replacement operations which have as their aim the reduction of abduction to about 45 degrees and the lack of any worth-while surgical approach to the spondylolisthetic.

The use of traction for two, three or more weeks as a treatment for low back trouble is not uncommon. It is, however, in my opinion valueless, to say the least. There is nothing to show that simple rest in bed would not be better. Before you could get any muscle pull this way there would first have to be a separation of the vertebrae. This is not like the traction and countertraction used in setting broken bones where muscle pull has caused an overriding of fragments. It is interesting to note that a writer in a respected medical journal[4] expresses the view that leg traction is of no value in disk trouble or for muscle relaxation in the back.

The results of a study made by the American Orthopedic Association were published in 1952[5] and analyzed 918 disk cases which had received laminectomy with or without fusion. Their criteria for grading results seem plausible for "excellent" and "very good" but what they call good results and fair results seem, to me, upgraded. They are as follows: "Good": "Original symptoms cleared up, no recurrences, deformities or disability. Weakness in back (guarding, stiffness, need for support), mild neurological residua (occasional leg cramps,

sensory loss and atrophy)." "Fair": "Original acute disability cleared up, recurrences with disability, painful weak back necessitating work of a lower physical order. Disturbing leg symptoms." "Poor": "Symptoms and signs not relieved." With this in mind read their conclusion, which is that 60% received satisfactory results who had laminectomy alone and 70% had satisfactory results who had laminectomy and arthrodesis.

My own conclusion is that joint sclerotherapy offers the most effective therapy presently available for the various unstable joint conditions considered here, namely: degenerated disk, hypermobile sacroiliac, unstable zygapophyseals, hypermobile knees, recurrent shoulder dislocation and spondylolisthesis.

Philadelphia, Pa.

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